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SEWAGE DISPOSAL FOR COUNTRY RESIDENCES

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THE following discussion of methods of sewage disposal suitable for country residences is based on the assumption that the residence is provided with so-called modern conveniences, that is, with a supply of hot and cold water, accessible from faucets in the kitchen and in the bathroom, with modern stationary wash stands, sinks, bathtubs and water-closets, and with suitable pipes, properly protected against frost, for leading the waste water from these fixtures away from the house. The discussion, therefore, deals only with the disposal of such water-carried waste as may be delivered by the house drain above referred to.

This waste water carries with it both organic and mineral matter, though in the proportion of only about one part per 1,000 parts of water. And yet this one part of organic matter may, under certain conditions, become offensive if not dangerous, unless properly cared for. Except for the one part of organic matter, the waste water might be carried to some stream to form a part of its volume, but there are these objections:

(1) Unless the stream has a minimum flow of about fifty times that of the sewage, and has a velocity and section such that deposits will not occur, gradual accumulation of solids will take place and by decay, become objectionable.

(2) If the stream, even miles below the point where the sewage is discharged, is to be used for drinking water, then the sewage becomes as so much poison, and common decency and fairness should forbid such a discharge.

(3) In New York State, the Health Law forbids, under penalty of a large fine, the discharge of sewage, even from a single house, into any stream, without the permission of the Commissioner of Health. There are many cases where the permission of the Health Commissioner can undoubtedly be obtained, but the method of disposal by dilution calls for no further comment or explanation.

But where the method by dilution is not applicable, disposal on land must be substituted. Fortunately this general method is well understood and should consist of two parts, viz.: subsidence and filtration. The reason for the twofold treatment is that the natural process of destroying the organic matter is two-fold, and consists first of a "rotting" or fermenting stage, and second, of an oxidizing stage—just as manure has to "heat" or rot before it disintegrates. It has been found by experience that if sewage is allowed to pass slowly through a closed tank of proper capacity, the first, or fermenting stage, will be properly provided for, and that then the oxidizing stage will be provided for by any ordinary soil.

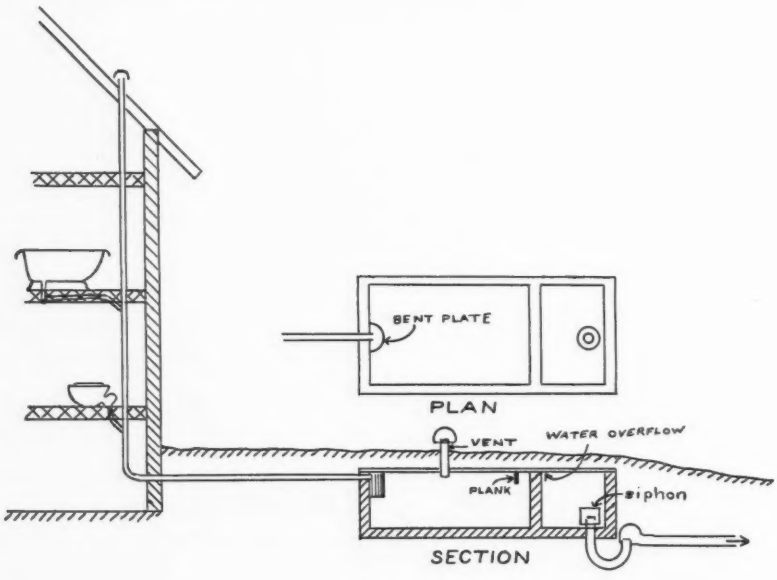

FIG. 1.

The capacity of the tank is of some importance. It should hold about one day's flow of sewage, and should be long and narrow, so that the fresh sewage, entering at one end, shall move so slowly through the tank that at its exit the desired changes in composition will have taken place. If each person of a household uses 20 gallons of water a day, and there are ten persons in the household, the tank should hold 200 gallons, or should be three feet deep, two feet wide and six feet long. If the use of water is at the rate of forty gallons then the tank might be three feet deep, three feet wide and eight feet long. In order to maintain the efficiency of such a tank, it must be left undisturbed, i. e., the water level must be kept constant, no currents should disturb the water surface, and the light and air must be excluded. It follows then, that a weir or dam must be provided at the outlet, and that the inlet must be carefully arranged for, and the whole tank is best placed underground. Figure 1 shows an ideal tank for the purpose. A hole has been dug back of the house, of the proper size, and the bottom and walls, eight inches thick, have been made of concrete. The cover is of plank, though a more permanent roof would be better. The inlet pipe comes in on the left, and a sheet of galvanized iron is bent around in front of it to prevent a current and to force the flow out equally in all directions below the lower edge. At the right end is the dam for holding the level of the sewage and about a foot back is a board on edge, to keep floating matter from going over the dam. A vent pipe is shown because gases are given off in the tank and should be allowed to escape.

The sewage from the tank is shown discharging into a second smaller tank holding one or two hours flow. One twelfth of the volume of the other tank would be suitable, and it is conveniently built against the other. In this should be arranged either an automatic flush tank whereby the contents are discharged regularly as often as the tank fills, or else a hand

valve, which may be operated from the surface, when necessary. The latter practice requires a much larger tank, (to obviate frequent visits to the valve), and the automatic arrangement is altogether the more desirable. These siphons cost about $10.00 for a three-inch size, and are practically indestructible.

The second part of the process, that is, the application to land, may be accomplished in one of three ways. If a vegetable garden is suitably located, with reference to the tank, the sewage can advantageously be run into furrows between rows of root crops, thus disposing of the sewage and increasing the productiveness of the garden. In deep narrow furrows the disposal will go on in winter as well as in summer, the heat of the sewage delivered from the flush tank keeping the ground open. About forty lineal feet of furrow ought to be provided for each person in the family. A second method is to carry the sewage to some part of the farm where the ground is sandy and turn the sewage onto level areas, from which the top soil has been removed. There should be two of these areas, and the flow shifted from one to the other every day. Underdrains in some cases may be necessary, though generally for a single house they can be dispensed with. About 30 square feet should be provided for each of the beds, if the sewage flow is 200 gallons per day as assumed above. Otherwise take ten square feet for each person, divided into two parts. No special distribution is required, a flat stone under the end of the pipe being all that is necessary.

Finally, the effluent from the tank may be turned into a line of three-inch

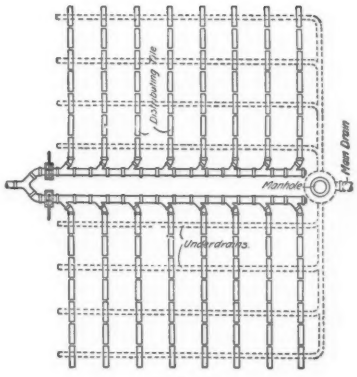

FIG. 2.

agricultural tiles laid in shallow trenches, ten inches deep, the separate tiles being merely butted together, so that the sewage can escape through the joints. This method of disposal can be used under the grass of a lawn without nuisance and even without exciting comment. Two precautions, however, must be observed. The tiles must be laid on grades of not more than six inches in one hundred feet, in parallel lines ten feet apart, and at least twenty lineal feet of tile should be provided for each person. The writer can personally vouch for the success of this last method, as he has watched a similar plant operate through severe winters without any interference with its continuous operation.

Fig. 2 shows one possible arrangement of the tiles for this method. Two sections are provided, controlled by valves shown on the extreme left, so that the two sections can be used alternately. Underdrains also are shown, although these may generally be omitted.

FORECASTING THE WEATHER

By George W. Mindling

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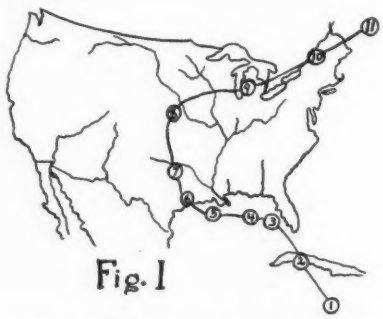
IN MOST of the habitable globe, particularly in highly civilized countries, the weather is subject to frequent, and in many instances to sudden and violent changes. This is especially true of the United States, and accordingly popular interest in forecasting runs remarkably high. No other part of the world experiences weather changes equalling in frequency and violence those of the northeastern part of our country. All the vast interior of the United States is visited by cold waves such as are unknown in any other continent. It is only on the Pacific slope and in limited portions of some of the most western states that the weather of this country manifests a regularity sufficient to remove anxiety in regard to its changes for any considerable period.

There is no class of persons that is not desirous of knowing what the weather will be at least a day or two in advance. The farmer plans his work in accordance with his expectations of the weather. If storms are coming he will prepare for them by bringing in his harvest or picking his fruit. The merchant, the shipper, the railroad official and all business men must regulate their affairs to some extent according to the requirements of the weather. A discussion of the relations of modern business to weather forecasts will be given later.

From time immemorial people have sought to know in advance the character of the weather and so widespread has been this desire that innumerable methods of forecasting have arisen. Foreknowledge of the weather has indeed appeared so important that every possible, if not plausible theory has had its trial. The importance of the problem has had an enormous influence in creating hope for its solution, a hope so great that people were not discouraged by the numerous failures of the signs of the weather. On the contrary, they studied the signs carefully and awaited the results patiently on the ground that nothing could be lost by the failure of a prediction but that each success was a clear gain. Of course, there was never any apparent reason that the winter should be like the first three days of December, that it should be unusually cold if the corn husks were uncommonly thick, that winter fogs should be followed by late spring frosts, and so on. Nor was any one ever able to prove by records of the weather that the proverbial old sayings were of any practical value in forecasting. But the difficulty of the problem was recognized by all and a perfect solution was, and in all probability, never will be expected.

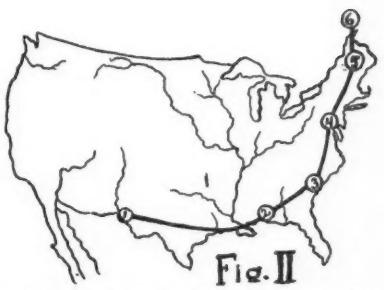


COURSE OF STORM FROM SEPTEMBER 8TH TO 11TH. FIGURES REPRESENT 24 HOUR PERIODS EXCEPT 5-6, AND 10-11 WHICH ARE 12 HOURS APART.

In comparatively recent times, the almanac and other long-range forecasts have been regularly published. These all make wonderful pretensions of fulfillment and it is not so surprising that many persons place some confidence in them, as they are prepared by shrewd men that know quite well how to hoodwink the people. The predictor may say, "Between the 16th and 20th of November, storms will move eastward and rain or snow will occur in the northern section of the United States." This is representative of the style of all the professional long-range forecasters. Such a prediction

as this will gain many a fulfilment as every intelligent person knows. That is, there will be storms with rain or snow in some part of the northern section of the United States between the 16th and the 20th of November, and any other four days of the month might be selected with equal reason and with equal success. But a prediction of practical value is not one that foretells storms in the northern section of the United States. There might be severe snowy weather in Montana, fair in the Dakotas and clear skies in Minnesota. The prediction of practical value must tell what to expect in northern Minnesota, in upper Michigan, in southern Ohio, in western New York, in central Illinois, and so on. And it must not say between the 16th and 20th, thus allowing a margin of four days for verification, but it must make a definite statement of the conditions to be expected day by day and night by night. To some persons the almanac forecasters may have seemed to be remarkably successful, but their forecasts contain nothing more than a thinking man should know, unaided even by the study of records or of the sciences.

Valuable predictions can not be made from weather proverbs nor from the positions and movements of the planets as some of the almanac forecasters would have us believe. Indications of the coming weather have been sought in the appearance and behavior of certain plants and animals, but doubtless these indications are as much the results of past conditions as they are signs of future ones. In the present state of knowledge there is only one basis on which to issue a forecast, and that is the weather map, which shows the weather conditions all over the country. The general eastward progression of storms and other types of weather is so certain and so well understood that it is hard to see how any one can expect a weather forecast to be based on anything else than a knowledge of the weather prevailing over the country, especially to westward.

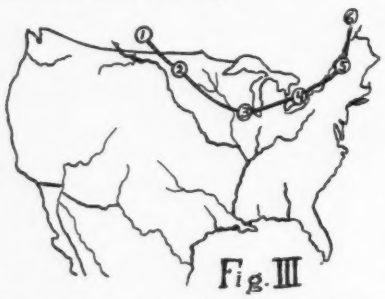


ILLUSTRATING TENDENCY OF STORMS FROM THE SOUTHWEST TO FOLLOW A CURVE NEAR THE COAST. JANUARY 5 TO 8.

There are certain modifications of this eastward movement that must, however, receive consideration, if we would understand the real value of the weather map in forecasting. The map is based on telegrams received from stations in all parts of the country, and is completed and ready for distribution within two hours after 8 A. M. and 8 P. M., when the observations of the weather are telegraphed. By noting the position of the storm center on each issue of the map it is easy to plot the course taken by the storm so as to represent its path across the country and show the distance past over in each twelve hours. The Weather Bureau thus traces the course of every storm that passes across the country, and publishes charts at the close of each month showing the tracks of all the storms that occurred during the period. The course of the areas of fair weather is also indicated. These charts show that storms do not always move in the same direction, Sometimes they travel toward the northeast, sometimes toward the southeast, occasionally they move directly north or south, and quite frequently in a fairly straight line eastward. Storms coming from any certain section generally follow a fairly well defined path and usually the entire course of a storm can be approximately foretold from a knowledge of its movement during a brief period beginning at or soon after its origin. For instance, if a storm first appears moving westward over the Gulf of Mexico, it will, in all

probability curve northward, pass thru the central valleys turning gradually toward the east, and finally move over the lake region or Ohio Valley to the New England coast and proceed for some great distance over the ocean.

It was a storm of this type that wrecked the city of Galveston on September 8th, 1900, causing the loss of 6000 lives and the destruction of $30,000,000 worth of property. Fig. 1 represents the movement of this famous storm from the morning of the 4th of September until the evening of the 12th, and indicates its position at various intervals. Fig. 2 shows the course of a storm that appeared central over El Paso, Texas, on the morning of the 5th of January, 1908. This storm kept very near the coast thruout its course. A third type of storm is shown in Fig. 3.



TYPE OF CURVE FOLLOWED BY STORMS FROM THE NORTHWEST. INTERVALS OF 12 HOURS FROM JANUARY 25TH, 1908.

It is apparent from these examples that the rate of movement is much greater in winter than in summer and greater in the eastern than in the western half of the country. These examples also illustrate the tendency of storms to move in rather well-defined curves. But the direction of the storm tracks is considerably modified by the varying distribution of atmospheric pressure, and the movement is sometimes accelerated, sometimes retarded.

Now the weather map shows all conditions likely to influence the movement of storms and thereby affect the changes of the weather. It indicates the regions of clear, partly cloudy and cloudy skies, of rain or snow; it shows the direction and force of the winds, the temperature and the reading of the barometer, while by comparison with the previous map any changes that have occurred during the last twelve hours may be easily observed. It is by means of such knowledge that an experienced forecaster of the Weather Bureau after having completed his morning map can look it over and dictate predictions for State after State almost as fast as he can talk, seldom making more than one error in six predictions.

Owing to the lack of adequate means of communication the general eastward movement of storms was unknown until comparatively recent times. It was first observed by Franklin, it is believed, but before the invention of the telegraph there was no possibility of taking advantage of the knowledge of eastward movement by furnishing advance information to threatened districts, nor had it appeared to be certain that weather predictions based on this knowledge would be worth while.

It has been said that the first scientific attempt at weather forecasting grew out of an incident in the Crimean War, and took into account the eastward progression of storms as observed by Franklin and others. On November 14th, 1854, a severe storm past over the Black Sea and destroyed many ships of the French fleet. It was remembered that a storm of considerable energy had swept over western Europe a few days before.

Accordingly the French Minister of War directed that an investigation be made to determine whether it was the same storm that ruined the fleet, and if so, whether it might not have been predicted. Weather records from all sections of the continent were consulted and it was found that the storm noted in western Europe had moved gradually eastward and proved to be the storm that wrought the destruction in the Black Sea. It was evident that by the use of the tele-

graph, the extent and the character of the storm could have been ascertained and timely warning could have been sent to the threatened regions. It was also evident, that to accomplish such a result on similar occasions, would require the maintenance of a system of observing stations well distributed thruout the country. At these stations simultaneous observations should be made frequently and the weather conditions immediately telegraphed to a central office, so that the state of the weather for the entire country might be known at all times. Then within two or three hours after each observation, predictions for every section of the country could be received by telegraph from the central office.

This incident, occurring as it did soon after the invention of the telegraph, gave a great impetus to the establishment and extension of national weather services. In this country weather reports had been collected by mail for some years and considerable work had been done in the making of a series of weather maps at intervals of one or two days. The weather observations were made chiefly by the army surgeons, the registrars of the United States Land Office and various scientific societies, while the Government Meteorologist, Professor James P. Espy and the Smithsonian Institution published the weather maps and with the aid of such men as Redfield, Coffin, Loomis and Joseph Henry deduced from them some of the leading facts relating to the movement of storms and other types of weather across the country.

Enough had been accomplished by the year 1861, to justify the establishment of an elaborate organization for the study of the weather but the occurrence of the Civil War so deranged the telegraph service that nothing of the kind could then be attempted. But in 1870, Congress passed an important act making it the chief duty of the Signal Service of the War Department to keep records of the weather and issue warnings of storms for the benefit of the shipping interests, particularly on the Great Lakes and along the Atlantic coast. The same year the first storm warning was issued. Soon after a system of flags and colored lights was adopted to be used as weather signals and displayed from towers and light-houses along the shores of the Lakes and oceans. Within thirty-five years the number of display stations has increased from about 25 to nearly 300, and there has been a similar increase in the number of weather observing stations.

(*To be continued*)

RYELAND SHEEP

By J. L. Stone
Professor of Farm Practice

WHILE in England last summer, upon suggestion of Professor Wing, I took occasion to get information regarding Ryeland sheep, a breed of which little is known in America but has attained a good reputation in some parts of Great Britain and is beginning to be exported for breeding purposes. With this object in view, I visited the farms of Mr. W. H. Davies and Mr. H. T. Smith, near Stoke Edith a few miles east of the old city of Hereford. It is claimed that the flocks upon these farms are among the oldest and best established of any to be found—that for at least eighty years they have been bred here in their purity. The name Ryeland seems to have come from a section of country south of the district named above which, on account of its sandy soil, is much devoted to growing rye and is spoken of as the Ryelands. Here a class of sheep was developed that seemed to have the quality of being readily fitted for the butcher on a sparcer vegetation and especially with less "roots and cake" than was re-

quired for other breeds. These sheep are recognized as of excellent quality in the Hereford market—the leading live stock market in the west of England.

Flock records have been kept for a long time, but I believe there has been no association formed to take charge of their registration. There seems to be little printed history of the breed in existence. I urged upon Messrs. Davis and Taylor the desirability of putting the known facts regarding the breed into permanent form before the passing of the present generation and obtained from the latter gentleman a promise to write out a detailed account so far as his knowledge of the breed extends and send it to me by mail. As yet it has not been received.

I found these sheep in many respects like the Shropshires, the most noticeable differences being that they have white faces and legs and are not so heavily wooled over the head as the Shropshires. It is claimed for them that they equal the Shropshires in size and this seemed to me to be correct, though I did not see any specimens as heavy as some Shropshires I have known. It is also claimed that in quality of mutton they equal the best, though it is admitted that on account of their white points they are sometimes at a disadvantage in markets where there is a prejudice in favor of mutton showing dark points. It is claimed that in the matters of fecundity, hardiness and freedom from disease, they excel other breeds that have been developed on richer land. Should further experience fully establish these claims it will be fortunate, as many of the breeds are more or less wanting in these important particulars. I observed, however, in both flocks that I visited, several animals down on their knees while feeding, indicating the presence of foot rot. The wool sells in the same class as Shropshire wool and the yield is about the same.

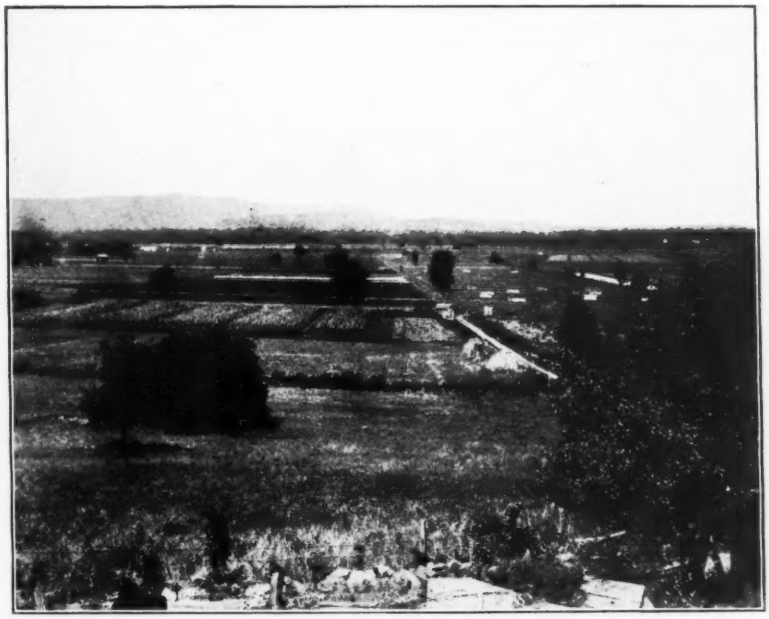
Everything considered, I was favorably impressed with the sheep I saw and I should expect that a breed developed on the soil and under the conditions that these have been, would take more kindly to our hot, dry summers and often dried up pastures, than do those breeds that have been developed on richer land and with heavier artificial feeding.

The illustrations show their characteristics quite satisfactorily.

A FLOCK OF RAM LAMBS IN THE FIELD OF MR. W. H. DAVIES.

A NOVEL FERTILIZER INDUSTRY

By Lowell B. Judson
Assistant Professor of Horticulture



GENERAL VIEW OF THE VALLEY.

AMONG the hills near Hackettstown, New Jersey, lies a circular valley about two miles across, which is as level as a floor and of surprising fertility. The soil is as black as coal, and for a depth of several feet appears to be made up entirely of decayed vegetable matter, all fine and mellow. Eighty-four per cent of it, in fact, consists of organic matter, so that it may not improperly be considered a vast bed of humus. Many peat bogs, of course, run quite as high in organic matter, but such soils are nearly always sour or coarsely fibrous, and totally unfit, even when drained, to produce any of the more exacting crops. This particular deposit of humus is unusual from the fact that it is perfectly free from acidity, and of a very fine, uniform texture. With no further treatment than draining, it is capable of producing enormous crops of vegetables and other plants which delight in a rich, mellow soil. Onions yield astoundingly, and celery grows most luxuriantly, as may be seen from the accompanying illustrations; and lettuce, cabbage, corn and tobacco are no less thrifty. It is evidently a most grateful pasturage for plant roots.

The idea of digging up this soil and placing it on the market as a fertilizer came several years ago to a man who had been in the fertilizer business for some time, and felt the desirability of a filler that, though cheap, would yet be of some actual fertilizing value, instead of merely inert, like the sand, ashes or plaster commonly used as diluents. This soil seemed to offer just the requirements, for besides being cheap and abundant, it carried a considerable amount of nitrogen, and provided the thing in which all chemical fertilizers were nearly or quite

FIG. 2. THE DIGGER AT WORK.

deficient, namely, humus. The soil required only to be dried and granulated to be ready for market. Excellent as the filler was, however, the fertilizer concerns preferred to keep largely to their old and cheaper methods, and this led to the new material being placed on the market as a fertilizer complete in itself, instead of a mere filler. It was christened Alphano, the Greek for *I yield* or *increase*. It is especially recommended for lawn dressing, since it provides humus without the least danger of weed seeds.

The machinery used in the preparation of this material is rather unusual and interesting. The field machines are especially designed for the work, and operated by electric motors mounted on the framework. Power is supplied from the factory near by.

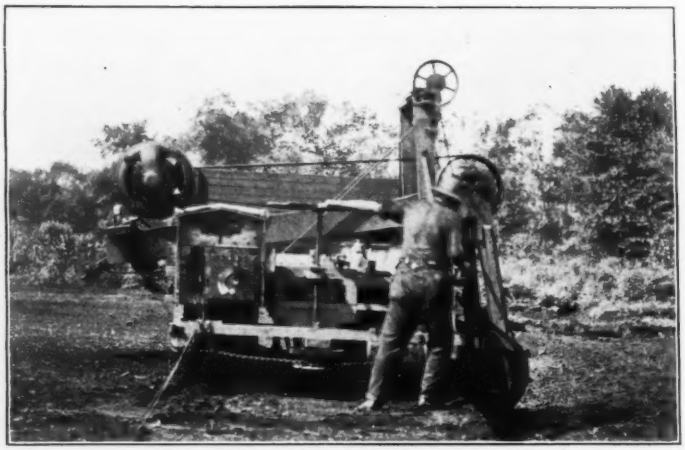


FIG. 3 REAR VIEW OF THE DIGGER.

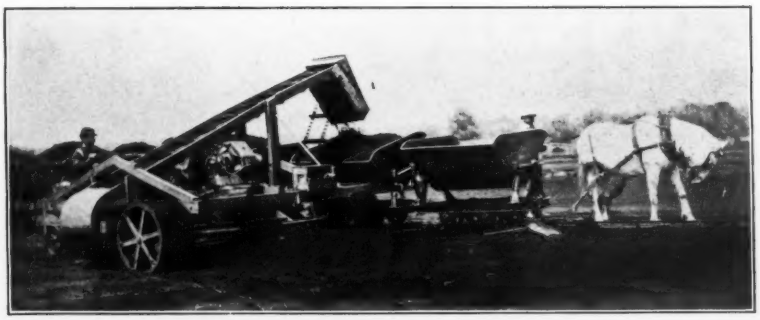


FIG. 4. LOADING THE DRIED SOIL.

A neat cut about ten inches deep and wide is made by the swiftly revolving wheel at the lower left hand corner, as shown in Figure 2. The spokes are armed with slightly projecting knives which cut away the soil with the greatest ease, for it is fine and uniform, and entirely free from sticks and stones. As the soil is cut it is whirled upward by the knives and directed by a guard onto the chain conveyer. The fan-shaped stream of particles can be seen in the picture. At the top of the conveyer a four-bladed paddle-wheel bats the soil sharply, completing the breaking up,and casting it out in a very even spread over a strip some two rods wide. The picture shows the soil flying out from the paddle-wheel. The ground at the side of the machine having been previously leveled, this thinly spread layer when dry is scraped into heaps by a motor-scraper. The rear view of the digger in Fig. 3 shows the steering gear, for the machine is mounted on low, wide-tread wheels, and advances slowly and automatically as the cut is made. The windlass at the top enables the operator to regulate the height of the cutting wheel. The cable which supplies the current is seen trailing behind.

After the dry soil has been scraped into heaps, it is loaded onto dump cars by the electric loader shown in Fig. 4. It is locomotive, and mounted on absurdly wide wheels to keep it from sinking into the soft soil. As the cars are filled, they are run to the factory not many rods distant and dumped on the pile shown in Fig. 5. This sun-dried material may now be bagged and

FIG. 5. DUMPING THE SOIL AT THE FACTORY.

ONIONS ON THE BLACK MEADOW SOIL.

shipped without further treatment, and part of it is so disposed of. It is useful where rich soil is required for mixing with poor, to form lawns or flower beds. City lawns can be greatly improved in this manner, though the expense is considerable.

Factory treatment of the soil consists in passing it slowly through heated iron cylinders of some six feet in diameter and great length. The cylinders are slightly inclined, and revolve slowly, carrying the soil along and keeping it thoroughly stirred. When it emerges from the lower end it is bone-dry, and in lumps from the size of a walnut downwards. Some is put on the market in this form, but most of it is passed through a crusher, which reduces the particles to uniform size. The finished article, from its color and size of grains, reminds one somewhat of onion seed. This form is the only one adapted to use as a filler. It is light and bulky, and takes up water like a sponge. It is rich in nitrogen, containing 3.62 per cent, and carries considerable phosphoric acid and some potash, though needing fortification in the latter if used as a complete fertilizer. It will commend itself to the buyer chiefly because of its high humus content.

ESTATE MANAGEMENT

By L. H. Moulten
Cuba, N. Y.

THE management of a rich man's farm or country place differs in many respects from the management of an ordinary farm, and a man educated and trained for a farmer may find himself sadly unprepared for some of the experiences of the estate manager, This does not mean that the scientific training of the agricultural college, the methods of the business course, and perhaps years of practice count for naught in this line of work; but that usually, although there are exceptions, the owner is a man who knows little of farm operations and cares less except as they

please him for the moment; and, while he may be familiar with some of the laws governing plant and animal life, he generally fails to apply them to such life on his farm. Consequently he may, or may not, appreciate the importance of having his farming directed by an intelligent and competent man, and hence he may, or may not, deal logically and consistently with him. This may account for plumbers, carpenters, engineers, doctors, veterinarians and various other artisans and professional men being engaged in managing farms for wealthy farmers.

Frequently the country places of our wealthy citizens are located in lands already too high priced for economical farming and the improvements usually put on them bring the total valuation up to a figure that precludes a profitable operation. This hard and fast idea of a money profit is not always indulged by owners; the pleasure derived from his farming may be as profitable to him as many of the little luxuries of other people are to them. One of the pioneer gentleman farmers of New York said, in his declining years that his farming was never so satisfactory as when his books showed the largest cash deficit. Doubtless he had in mind the costly work in drainage and the reduction of water levels for which his place was noted and in which he took great pleasure.

It is evident then that the manager must be prepared for some eccentricities, on the part of the owner, which will be expensive but which, if he is wise, he will accept as inevitable and make the most of them. Whatever may be the owner's peculiar ideas of the work in hand, he expects his manager to be competent and to give him an intelligent, economic and honest administration of the affairs entrusted to him.

The owner may spend money on hobbies that bring down the criticism of the community, but the manager must commit no such offense against popular judgment. It sometimes happens that the manager must be the owner's representative in the community during his absence, and, if his landed interests are large, the manager should occupy a position in the community which will command respect. This can only be attained by being an integral part of the community and its activities.

In order to give the owner greater satisfaction, his farm should be noted for the excellence of some of its features, its cattle, horses, poultry or crops. Usually the owner has a favorite breed of horses or cattle and wishes to breed them more or less extensively. To do this successfully the manager must know the breed, its characteristics, its strong and weak points, and be able to select breeding stock with a degree of certainty that they will bring ultimate success.

In his efforts at tilling the soil will come the test of the manager's farming capacity, and the community will measure him by the size of his potatoes and the height of his corn. If in these respects he leads the neighborhood, they are with him to a man; if he fails once, it will take a good many high records and blue ribbons to square him with them. In the owner's mind this same standard of qualification is likely to come, for the size of the growing crops is very patent to the eye of the uninitiated while the quality of an animal may not be so apparent. The greatest test of the manager's skill, however, lies in the quality of the milk, butter and poultry he sends to the "madame's" table. If they are good, he has passed the period of probation, if not, he had better get his packing boxes ready.

As will be already inferred, the manager's great trouble will be in the too great versatility expected of him. A corresponding responsibility in other lines of business would be divided among several men, so likewise it would be best for him, while sticking close to a few things he can do well, to parcel out some portions of the work to men that are especially fitted for it and require it at their hands.

For the young man who has had the advantages of an agricultural course

together with enough practical experience to qualify, this line of work offers many inducements; the financial return, while not large, enable a man to live at least as well as the man on double the salary in the city; the opportunities for perfecting skill and broadening his experiences are more ample than in the city. But he must have capacity for work during long and irregular hours even though his men may have short and regular hours; he must be capable of handling men in a masterful way and be something of a diplomat in order that he may maintain peace and good order among them.

REMINISCENCES OF A "SHORTHORN"

By H. H. Harriman

Winter Course, '05

I WELL remember the first time I attended a short Winter-Course in our University. I understood to a certain extent the feelings of misgiving and doubt and fear that the young farm lad entertains when he finds everything about him new and wonderful and confusing; but I wonder if he had the slightest idea what such a course of study was to me, a city-bred fellow. I can assure you that I was as much at sea in the various branches of the agricultural course, about the terms and the methods of farming, of machinery, of seasons and the weather in regard to crops, as the farmer boy is with the strange scenes of college life.

In three or four weeks, however, the newness wore off, and we began to enjoy the life of the University, and to understand the broad scope of the subjects we had taken up; and our faith in our professors ripened into friendship and affection. Many a one of us had never been away from home over night, but all of us except one, overcame the homesickness and he gave up and went home. Still, he had pluck enough to try again the next winter and that time stayed, passed among the highest in his classes and the next fall returned and entered the regular course.

How patient the professors were with us stupid fellows; we really did know so little. But we had come to learn all we could, so we went at it with a will and it was study every minute. The first word that was new to me was *humus;* "What was that?—Oh!" And so it was, from the way a plant chemically absorbes its food from the soil to the proper selection of seed; or if in Horticulture, the selection of trees, their pruning and spraying and the picking and packing of fruit; and if in dairying or poultry keeping, the same process was gone through, the selection of the best stock, keeping them healthy, and making them produce the best results by the knowledge gained in these branches.

We learned that the success of the farmer depends, not upon mere hard work, but upon his knowing how and why and when to do it. And the winter course gave one this broad knowledge. And it did more, it gave him a keen desire for a wider range of subjects. He rubbed up against other opinions, and being bound to find out which was right, he decided to experiment as soon as he got home. Now was the time for him to interest himself in the Experimenter's League, a league which at least one farmer in every locality should join. It is like Cornell, good not only for the one directly interested, but also for the whole neighborhood from which that one comes.

The first social evening was one of the regular Assemblies where the professors and their wives and the regular agricultural students gave an entertainment of readings and music, ending with delightful refreshments and a general endeavor to get ac-

quainted with one another, and not to allow the newcomers to feel that they were strangers. These Assemblies occurred once a month, and they were looked forward to with high expectations, for the music was always good, and our good Dean Bailey often read a poem which he had himself written. And then toward the close of the evening, the college songs were sung by all. We were not all familiar with them at first, but when such as "Jingle Bells" and "The Quilting Party," were sung, we made the roof ring. Many life friendships were formed at these Assemblies.

A few of our instructors like Professors Fletcher, Rice and Pearson were always with us, entering into all of our club meetings, our debates, and our entertainments. And what good times we had! Not every second week but *every* week. We would invite one class for one evening, and on another the Home Economics class perhaps, (the members of this class were supposed to be farmer's wives, but most of them were daughters yet.) We had a lively debate with a team from one of the other Short Course clubs, and at the end of the term, we showed our appreciation of the many entertainments given us, by playing host for once at an Assembly, and by presenting some unique features, with all the regular college boy's vim. During our enthusiastic reception, one could not think that we had ever tried to keep in the background, for we were the lions of the evening and everything from the first song of the quartette to the last bit of refreshment was a pronounced success.

It is needless to speak of the campus, finer than any in America; the handsome buildings, the beautiful hills, the picturesque waterfalls, the fine, large lake in the valley, and the wonderful, the grand gorges. And then the skating and the tobogganing on our own Beebe Lake. Such great fun, so exhilarating! And perhaps a dance or two in the country. Many of the fellows said it was the best time of their lives!

WHY I CAME TO CORNELL

By T. R. Temple

General Agriculture, '08-'09

THE editor has asked me to state briefly my reasons for coming here this winter, else there would have been less work for the proof reader of this issue. I presume that most of the men, who take the winter course in agriculture, come with far more practical experience than has fallen to me. After three years of University work with a view of entering a profession, I was ordered onto a farm with instructions to work as hard as I pleased but not to open a book. Next I tried business until I found that the hurry and stress of metropolitan life was drawing my E string to an uncomfortably high pitch. Then I decided to follow agriculture permanently and hired a large dairy farm for two years. In that time I have toiled early and late to the limit of my strength, but my love of rural life is as strong as ever. The appreciation of the poetic charms of tilling the soil has not yet been knocked out of me. It has been worth while to me to be able to look across onto forty miles of picturesque Vermont sky line from my dining-room window. Nor do I fail to take constant delight in the ever new glories of our sunrises and sunsets.

But man cannot sustain life by these things alone and I have to remember that I have undertaken certain obligations to my family. The economics of the situation must be considered. I am convinced that I have not obtained as good returns as the farm ought to yield, and by the application of better methods can be made to yield. And while my two

years of experience has taught me many useful things, they have taught me my ignorance of vastly more. So I have come to Cornell with a lot of practical questions to ask of this winter course.

Inexperienced though I was, I made my dairy produce more milk per head than my neighbors who had been dairying all their lives. What I hope to learn now is how to get the same results more economically. Again I am looking for instruction in the fitting of soil for crops of different kinds for I have purchased a farm entirely different in character from the one I have rented. In combining truck farming with dairying, new problems of drainage and fertilizing will demand attention. Indeed, I have never felt more keenly that I was working in the dark and throwing away money than when I have been paying my bills for commercial fertilizers.

These questions have constantly recurred to me, and yet it is doubtful whether I should have come to Cornell, had I not met one of your former winter course men and asked his advice as to the practicability of the scheme. He was emphatic as to the value of the work and assured me that I could not afford to miss the course if it were possible for me to get away from my work. He is now in a responsible position at the head of a condensery and milk shipping plant. He had had a dozen years of experience handling milk before coming to Cornell and I felt that, if the winter course could help a man of his intelligence and experience, it could certainly help me.

Finally, while I did not come here expressly for that purpose, I am anxious while here to become acquainted with the men and measures that make for better moral, social, and economic conditions in our rural life. In my own experience I have seen the decadence of what formerly was, and to a degree still is, a prosperous farming community, I am interested to know whether that decline is necessary and permanent, and also whether it is characteristic of conditions elsewhere. A stream cannot rise above its source. In a large measure, since the day the embattled farmers withstood the shock of arms with the mother country, the source of our greatness as a nation has been in the stamina of our country-bred men. To one who believes that in a very unique way this nation of ours is working out political problems of imdortance to the whole world, the question of the future of the American farmer assumes large proportions.

THE ADVANTAGES AFFORDED BY COUNTRY LIFE FOR THE DEVELOPMENT OF USEFUL MEN

By F. N. Darling, '10

AGRICULTURE, unquestionably, is the noblest and most enjoyable occupation of man. It was formerly believed that farming was the most inferior of all callings, but such a belief is very unsound and far from the truth. When agriculture is thoughtfully considered, it will be found that for the development of useful men it affords the best advantages.

It is a fact worthy of note that the majority of the world's greatest soldiers and statesmen, men of letters, business, science, orators and reformers have been reared in the country. A brief consideration of a few of the world's greatest men will prove this fact. Washington who had very little schooling lived in the country most of his life. The foundations for his future greatness were laid when he

was a surveyor, gaining an accurate knowledge of the country and learning the habits and customs of the early settlers. "Agriculture," said he, "is the most healthful and the most noble occupation of man."

It would be useless to attempt to name all the great men who were reared in the country, for they are too numerous. Russel Conwell, an eminent divine of Philadelphia, in one of his recent lectures said, "Eighty per cent of the brain and brawn of our large cities is supplied by the country."

Soundness of health is indispensable for the successful man. The lawyer who sits all day in a crowded courtroom and the student who works hard at his books, like all other great workers must have health to be successful. A man hampered by physical difficulties cannot accomplish much. Abundance of fresh air, freedom of exercise, sufficient sleep and freedom from bad habits and vice, all characteristics of country life, are conducive to a vigorous constitution. City air, filled with its germs, gas fumes, and all other kinds of impurities was never meant for us to breathe. It is a fact well worth knowing that country air excites deep breathing which strengthens the lungs, giving vitality and success. Dr. Barrow of England who has made this subject his life study says, "I venture to advance the proposition that the 'vital force' of the city dweller is far inferior to the 'vital force' of the countryman. The general unfitness and incapability of the dwellers of our large hives of industry to undergo continued violent exertion or to sustain long endurance of fatigue,is a fact requiring very little evidence to establish. It may be conceded as an established fact that the city man is, on the whole, constitutionally dwarfed in tone and his life, man for man, is shorter, weaker and more uncertain than that of his country brother. The true causes of this deterioration are neither very obscure or far to seek. They are bad air and bad habits."

Another important advantage of country life is that it affords the farmer's son an opportunity of acquiring the habit of industry. Idleness kills most town and city boys as men, while the country lad learns to overcome obstacles, forms the habit of economy, the first principle of business of any kind, and acquires that real stamina and perseverance which are the most valuable incitements to performing one's duty. This makes him better fitted for the struggles that come in later life. He learns to be independent and very seldom falls into the habit of trying to get something for nothing, but cultivates that honesty which is so necessary for the growth of useful men.

The man who is thoroughly trained in agricultural subjects and returns to the farm has a marked advantage over the so-called professional man as far as making a living is concerned. The late President Harper of Chicago University once said in an address to the graduating class, "You who are now entering the world will find that poverty will be the strongest opponent to overcome. You who are entering life as lawyers need only look at the papers today to find that the average lawyer does not earn his salt. Those who become physicians will find that their only companion for a few years to come will be the wolf at the door; while those who go forth to teach need only to witness the struggles of the school teachers in this city. The school board is beset with howls and wails for an increase of salaries." While President Harper did not refer to the farmer directly, we are led to believe from the trend of his remarks that the farmer has a better chance to make a living than the lawyer, doctor or teacher.

The country lad has an advantage over the city boy in that good morals are more easily formed in the country. The great evils of the city such as those of the tenement houses where millions of poor children seldom see a blade of grass or play in the sunshine and fresh air, the bad habits the city boy is addicted to and his associations with the lowest class of criminals, are very poor factors in the making of useful men.

The Cornell Countryman

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DECEMBER, 1908

To the Newcomers

In the beginning of a college year come new students with two or four years of work before them, and gradually, by means of experience, as the days proceed and common interests spring up, they find their places in the routine and become active, co-operative units. You, members of the short course classes, arrive with not two or four years before you perhaps, but only part of one, and you find the College well under way with its activities well systematized. Now this is just as it should be and within yourselves lie the power to take advantage of this opportunity. We welcome you as another part, an important, familiar part of the student body, and we want you to join us in the same spirit, with an idea of becoming even more actively a part of us, of the college life and work, than former winter course classes have become. You will, of course, have your clubs, your teams and your debates, but besides this you have offered to you, invitations to join the clubs of the College, to attend meetings and further, you are not only invited but urged and exhorted to become active members of the Agricultural Association, and to attend each and every Assembly. In this December Assembly you will receive a further understanding of what this college life offers you. THE COUNTRYMAN desires here to extend to you its hand on the part of the students, and to express, as best it can, the welcome, the interest and the regard that those students feel toward you, who are now among us.

Expectations

So much for the feeling with which we have seen you come, and may it prove but the forerunner of mutual interests and acquaintanceship. But having been here a little longer than you have, we also expect certain things of you, just as upperclassmen expect things of freshmen. We expect to see you not only join us in recreations, and social intercourse but also in the pursuit of that for which we are all here, broader knowledge, increased capability. College spirit is made up largely, though the fact may not be often dwelt upon at length, of ties of work and industry. These we expect you to strengthen and tighten, as have the short course men and women of the past, and in this way to become worthy of the honor you receive in becoming a Cornellian. Keep that thought in mind, that you are members of Cornell University, whose name bears a reputation for scholarship, prowess, and clean sportmanship. That name and the upholding of its integrity, its dignity, its honor, rests with every one of us as a responsibility and a privilege. You, too, have your share; and see to it here and now, as well as henceforth in all your work, through all your lives, that you do not fail in fulfilling your part.

Health, Wealth and Happiness

It is very probable that were the investigator, be he theorist or practicalist, to measure the blessings of the farmer with those of his city brother, he would group the blessings of both under those three heads. There is indeed quite a lot of meaning in those words, quite a number of probabilities and possibilities. In the interests of the farmer, it is the aim of THE COUNTRYMAN to help him increase the sum total of his health, and his wealth, and his happiness. It has designed a new means of attempting to thus assist. On another page an article by Professor Ogden, opens a series of practical articles upon the general subject, "The Farmer and his Health, Wealth and Happiness." The increased attention now being shown questions of public health is significant of the supreme importance of the first subject. We have, therefore, begun with a discussion of one factor of great potential influence in the maintaining of the health of the farmstead. In forthcoming issues we shall present such questions as "Food Problems on the Farm," "Farm Hygiene," "Ventilation," etc., by authorities on the subjects and each one we shall endeavor to have carry some advice, simple and practical, that will be of some direct value and use. Later, under the head of "The farmer and His Wealth," we hope to offer similarly practical articles on economic phases of country life—the farmer's investments, his methods of accounting, perhaps the influence of politics on his success. Finally in closing, we shall endeavor to touch the chords of æstheticism, the questions that add to the contentment and happiness on the farm. Criticisms and suggestions in regard to this plan will be gladly received; if we can even awaken thought, that will give birth to improvement and greater results, we shall be content. The motive and the themes are worthy.

Christmas

This is a December COUNTRYMAN and December means, among other things, Christmas. Christmas also means several things; among them, vacations, turkey and plum puddings (sometimes subsequent regrets), and presents. In that last regard, this season is somewhat unique, for in the thought of presents, receiving is in no wise more emphasized than giving—oftentimes even less. The COUNTRYMAN can only express best wishes for success in the former, but it stands ready to aid for nine months of the year in regard to giving. For a relative, friend or acquaintance who is of the country, either in location or spirit, we suggest a subscription to the magazine, leaving us to do the rest to make it every bit as good as we can. Then, too, there are copies of Dean Bailey's Poems, which, now at the time of his preeminence in affairs agricultural, are especially appropriate and lasting mementoes. There is yet time to prepare for the holidays; you can save time now and arrange for a revival of Christmas greetings for each of the nine months hence by leaving with us the name and address of a new, involuntary subscriber.

Country Life

By this time, the Commission on Country Life has completed a good three-quarters of its labors, as far as travelling and hearing the sentiments of various sections are concerned. In another sense, the results of this work are only just beginning, for the report has yet to be

presented, and the replies to the hundreds of thousands of circular letters sent out, represent material for further investigation for many months. Certain of the readers of the COUNTRYMAN have heard of the actual aims of the Commission from Chairman L. H. Bailey at the last Assembly. For the benefit of others, we hope to publish shortly an article on its work and the conditions and problems with which it has to deal. But such talks and articles can but begin to present the many sides of the vast subject of Country Life Conditions. These are to be seen, everywhere throughout rural districts and no more can we attempt to present them, than the Commission can, by itself, affect them. Its work is not of that kind, but rather is to furnish the dynamic spark, the primary impulse, that is to stimulate the efforts of the future towards the betterment of some of the phases that cry for remedy. And its duty is to pave the way, and, with suggestion to illuminate the road to the broadening and the swelling of the happiness and usefulness of country life.

Hardly under the head of "Book Review," but rather as mention of a handy little note-book, do we desire to call the attention of our readers to the "Diary for 1909," put out by the B. G. Pratt Co., manufacturers of Scalecide. While on the same general lines as other similar pocket journals, it is more complete and contains, in conjunction with the appropriate dates, directions for spraying, with this insecticide. Farmers who grow fruit and use this preparation for the protection of their trees, will find the diary neat, handy, and useful. Application for copies may be made to 50 Church St., New York City.

A VALUABLE EXAMPLE FOR ALUMNI

Highland Farm, Noroton Heights, Conn.
October 18, 1908.

Gentlemen:

I enclose a few notes about members of the 1908 Winter Agriculture class which may be of interest to you. I am keeping a card index of the class and hope to be able to keep in touch with its members and what each is doing. If they will do their share of this work and let me know of any moves that they make, this ought not to be very hard to do. * * * * *

Trusting that you may be able to use some of the enclosed items, which are the most detailed that I have at present, I remain,

Yours very truly,
James G. K. Duer,
Sec'y. of the Stone Club.

The foregoing letter is of considerable importance to the COUNTRYMAN and was received with a great degree of satisfaction and gratification. At last we note a definite and practical scheme of co-operation that will be of immeasurable assistance to us in keeping up the Former Student column of the magazine—an assistance that, we hope, will result in greater interest and more complete information for our readers, of those who have "gone before."

Naturally in the case of classes which elected no permanent secretary, and had no definite organization, this plan can hardly be carried out and we must depend upon the individual members for notification of their whereabouts and activities. But there is no time like the present for the institution of such a scheme and we heartily urge its consideration upon members of the present classes, regular and special as well as Winter Course.

A good deal could be written upon the advantages of such a development of connecting ties, not only to the COUNTRYMAN but to the members of the great mass of alumni, who could thus keep in touch with each other and gain the benefits arising from the influence exerted by the success, progress and advance of their classmates. The organization of the College would, in a way, be maintained, even as its students scattered over the world, and an undergraduate of the College of Agriculture could look forward, not to a separation from all the influences and sentiments that surrounded him for two or four years, but to an entrance into a great, unified, complex body of Cornellians, of agriculturists, working in different lands and at different pursuits, but with the same spirit, and the same ambitions and enthusiasm for the advancement of their common vocation. Again we urge that the present classes before graduation, organize, elect a secretary and determine to make use of him, and their connecting bonds of fellowship in after life.

GENERAL AGRICULTURAL NEWS

THE following note, though somewhat delayed in reaching us, speaks for itself in behalf of the live interest that is characteristic of the Short Course organizations, both in the College and in the midst of work outside, afterwards.

"The Fletcher Club, the Short Course club of 1905, the one that never dies, held its annual meeting at the State Fair in October. Among those present were M. F. Barrus, (now one of our college instructors), H. B. Patten, M. J. Shaw and Mrs. Shaw and H. H. Harriman. Letters of regret were read from Professor L. W. Fletcher, Mr. and Mrs. B. W. Law, R. C. H. Fowler, W. J. Faulkner, L. A. Ripley, A. F. Snow and others. Old times at college were brought up, new methods of farming discussed and a pleasant hour spent."

* * *

The American Society of Agronomy met November 17 and 18 at Washington, D. C. O. S. Morgan, '07, M.S.A., who was recently called to Alfred University as director of the new agricultural college spoke of "Some Experiments to Determine the Uniformity of certain plats for field tests.

* * *

Professor Bernhard Bang, the noted Danish Veterinarian, delivered an address of unusual importance recently, before the Veterinary College. His theme was Bovine Tuberculosis and its control according to methods used in Denmark. He emphatically denied that tuberculosis is hereditary and showed that it was not transmitted from parent to offspring when the latter were fed pure food and not allowed to come in contact with diseased animals. On the other hand, healthy calves from healthy parents have contracted the disease when fed on milk from affected cows or when allowed to come in contact with them.

Professor Bang then proceeded to show how easily and economically a herd could be rid of the disease by means of simple remedies, which the farmer himself could apply. The means of prevention and chief remedy for tuberculosis is sanitation; abunddant sunlight and cleanliness are also preventives. When the disease does get a start, it means that proper sanitary precautions have not been taken. The diseased animals should be isolated and care should be taken, when skim-milk from a creamery is fed to young stock, that none of the milk is from cows affected with the disease. As a safeguard, all such milk should be heated above 80°C. (110° F.)

In Denmark, where the Bang system is in vogue, the tuberculin test is

applied twice each year, and as soon as early stages of the disease are detected the unhealthy animals are isolated. In this way an infected herd may be used to build up a healthy one if the calves are removed when born and fed uncontaminated food. A case was cited where a peasant had only twenty-two cows remaining from a herd, seventeen of these having the disease. They were isolated and their calves kept from them, and in three years, twelve healthy heifers had been raised from the seventeen unhealthy cows. Because it involves so little hardship and because it may be applied by the farmer himself, the Bang system was heartily endorsed by Dr. Law, as being very practicable and desirable.

* * *

The final reports on the hay and oat crops for 1908 show that the former is a bumper crop, while the yield of oats is wholly unsatisfactory. The average yield of hay per acre is nearly 1.5 tons, which is heavier than for many years; the acreage is also larger than usual, which makes the crop the largest on record. The total yield for the country is 61,383,000 tons.

The oat crop is almost universally a failure. The crop started under favorable conditions, but before maturity, the drought which set in had such a detrimental effect that there was little or no recovery. Besides this, much damage was done by insect pests. The yield was only 756,806,000 bushels against 1,002,376,000 bushels in 1905.

* * *

The National Dairy Show Association has placed at the disposal of the Dairy Division of the Department of Agriculture, the sum of $2,000 to be divided as prizes among the managers and secretaries of creameries and cheese factories.

The contest is limited to every manager or secretary of a factory making not more than 500,000 nor less than 50,000 pounds of butter and not more than 200,000 nor less than 20,000 pounds of cheese, per year. A butter or cheese maker who is manager or owner of a factory is also eligible. Those who enter the contest will write articles of not less than 200 nor more than 1,000 words. The statement may contain a full account of how the plant is conducted, describing methods of manufacture and the handling and sale of product. Every contestant receiving a rating of 70 out of a possible 100, will receive a share pro rata of the $2,000 and for every point above 70, he will receive an extra share pro rata. This is the first opportunity managers and secretaries have had of comparing methods and should prove of great benefit to creamerymen.

* * *

During the past summer, the Pennsylvania State College of Agriculture Experiment Station has issued a valuable and comprehensive bulletin on Poultry. The work was planned and conducted under the direction of Professor George C. Watson.

The points studied were:

1. Rate of growth.
2. Food consumed.
3. Weight at different ages.
4. Relative weight of pullets and cockerels.
5. Loss in dressing and drawing.

Besides a series of careful observations on these points, different types of poultry houses and colony houses together with brooders and incubators are taken up and discussed. Considerable space is given to the selection of stock, the rearing of chicks and to feeding problems and various diseases of poultry are also treated. This bulletin is full of information that is extremely practical and useful to any raiser of poultry.

* * *

Unusual generosity to the students of the agricultural colleges is being shown by the National Corn Exposition. Trophies to the amount of $2,500 have already been provided. Announcements were passed on to the agricultural college professors early this fall and word has been received from the most of them that student teams representing their college will compete at Omaha from December 9 to 19.

A special trophy founded by the Hon. Zeferino Dominguez, of Puebla, Mexico will be awarded to the team receiving the highest total number of points in the corn judging class. This trophy is a handsome, solid silver bust of President Diaz. The silver portion is ten inches tall and rests on an onyx pedestal. Its value is $1,500.

The oat trophy is an artistic creation four feet high. It represents a sheaf of oats capped by a spray of that grain. It is valued at $1,000 and was founded by the Western Grain Dealers' Association.

An award will be made in the wheat judging classes for proficiency. To the student receiving the highest total number of points in corn, oats, and wheat judging, a solid gold watch valued at $50 will be given.

The students' judging contest is open to teams of five members selected by agricultural colleges. Oral examinations will prevail. The students must be ready to answer all questions asked by the judge. Sixty points shall be allowed for placing and forty points for reasons.

The corn samples shall be judged from the standard of seed corn. Ten ear samples of five of the leading varieties must be passed upon. The varieties are Leaming, Reid's Yellow Dent, Boone County White, Silver Mine and Golden Eagle.

A beautiful gold emblem will be awarded to the best written essay on the following subjects: Producing a Maximum Corn Crop; the Principles and Practices of Corn Breeding; Commerical Uses of the Corn Plant; Corn Machinery; Boys' and Girls' Growing Contests; Corn as a Food; Insects Pests of Corn; Silos and Silage; Increasing the Oat Crop; Improvement of Small Grain by Breeding; Rural School Agriculture.

Essays of not less than 1,000 nor more than 1500 words are admitted. In awarding the prizes, originality, workable value of the ideas presented and clearness and conciseness of presentation will be considered. All articles must be in the hands of General Manager of the National Corn Exposition, Omaha, not later than December 9th.

THE ANNUAL CHRYSANTHEMUM EXHIBIT.

THE annual exhibition of Chrysanthemums was held at the Forcing Houses, from Monday, Nov. 2d, to Thursday, the 5th. Taking advantage of the fact, the Lazy Club chose the chrysanthemum as the topic for discussion on the evening of the 2d, and the attendance which was the largest so far this year, showed that considerable interest was evinced in the subject.

The room was tastefully decorated for the occasion, and talks were given by members of the faculty, and others. Mr. E. I. Bayer, Sp., who has had considerable experience in the commercial culture of this flower, created a great deal of interest by describing in detail the method employed at his home, where upwards of 40,000 chrysanthemums are annually grown by female labor, under the supervision of a lady foreman.

Mr. C. E. Hunn, of the Nature-Study Department was very interesting with his reminiscences of the chrysanthemum. Long-forgotten varieties were discussed, and comparison made between the magnificent blooms as grown today and those of a dozen years ago.

Mr. H. J. Moore of the Department of Horticulture spoke on the general culture of the 'mum and by demonstration showed how large flowers were grown for exhibition purposes, also treating the subject of soils and fertilizers. He made the remark that although the climatic conditions of America were not so favorable as those of the British Isles for chrysanthemum culture, yet the American grower invariably held his own with his more fortunate English cousin on the other side. Mr. Moore pointed out that the chrysanthemum is grown out of doors in England, until the flowering period is reached, but in America is, of necessity, cultivated under glass, the drying influence of the climate proving detrimental to its welfare.

During the week the exhibition was open to visitors, some 500 persons visiting the Forcing Houses. The exhibit of 40 varieties apart from its attractiveness possessed features of considerable educational value, the blooms being properly arranged, labelled and so staged that each was seen to advantage, while the general effect left little to be desired.

CAMPUS NOTES

The November Assembly was held on Thursday, the sixth, with an unusually large attendance and an atmosphere of complete enjoyment in spite of the continuance of the plan of no refreshments. The Agricultural Glee Club made its first appearance of the year, in leading Alma Mater, then J. F. Grace, Sp., rendered a bass solo which was heartily encored. Dean Bailey, who was to leave the next day to begin work with the Commission on Country Life, made his usual good talk even better and more effective than ever. He read "Mr. Dooley's" observations on the Commission and gave a full idea of its scope and the progress that it had made. To the poems that have gone before, he added another new one, "The World's Highway," which was as easily his best as the others have been in their turn. After his address the Mandolin Club which is considerably larger than that of last year, made a very favorable impression and was followed by the Evening Song and the social hour.

* * *

Professor Cavanaugh of the Department of Agricultural Chemistry was appointed delegate from the College to the convention of Official Agricultural Chemists at Washington on November 16. While at the capital he attended the convention of the association of Agricultural Schools and Experiment Stations.

* * *

The Poultry Association held its third regular meeting in the Auditorium, Thursday, November 12. In the absence of the President and Vice-president, Secretary F. E. Benedict presided, opening the meeting with a question-box in charge of Mr. Jacoby. A short business session followed and it was voted to accept persons not taking poultry work as associate members upon payment of twenty-five cents. These members will not be allowed to vote or hold office. The main feature of the evening was an illustrated lecture by Mrs. A. B. Comstock, who related in a charming way her experiences in Egypt during the past year. Piano duets were played by Misses Seamon and Dobb of the Conservatory of Music, after which refreshments were served.

* * *

The round of winter meetings in which the members of the Horticultural Department assist has been under way for some time. There are always two important state meetings which are attended by representatives of the Department. These are the conventions of the State Fruit Growers' Association, which occurs this year at Medina, and the Western New York Horticultural Society always held at Rochester. In addition to farmers' institutes and grange meetings in New York State, the members of the Department have accepted certain engagements outside of the state.

Professor Craig attended the meeting of the Maine Pomological Society at Waterville on November 11, and addressed an important conference of the Governors of the New England states in Boston on the 23d. This conference considered the shellfish industry and forestry in addition to fruit-growing matters in New England. The last topic was assigned to Professor Craig. He also attended a county horticultural society meeting in Pennsylvania in December and the meeting of the American Wine Growers' Association in New York.

Professor Judson attended the New York Chrysanthemum Society exhibit in New York, and has been engaged in making an examination of the cauliflower and 'sprout industries of Long Island.

The Department of Horticulture cooperated in a chrysanthemum, civic improvement, and horticultural exhibition in Elmira early in November, being represented by Mr. L. D. Batchelor.

* * *

A meeting of the Round Up Club was held on November 9th, with a good attendance. Mr. Palmer explained the "International Consolidated Record Association" and a general discussion followed. Mr. Elder then gave the history of the tariff on the importation of pure bred animals and told of its influence on importations.

Other meetings had been held on previous Monday evenings, with a good attendance each week. On October 12, G. W. Tailby, Jr., Elmer Savage, F. D. Palmer and C. H. Van Auken had a discussion on Stock Judging at County Fairs. The following week the subject of Exhibiting Stock at County Fairs was taken up and on the 26th, fourteen members discussed different state affairs, the exhibitors and their stock, and the prizes won.

* * *

The College Department of Soils is sending out to the different dealers in lime throughout New York and Pennsylvania for full information as to where all forms of agricultural lime may be obtained and the prices of the same. Similar information is also being sought in connection with drain tile.

The department has completed the soil survey of Livingston County, a total area of 1043 square miles having been covered.

* * *

The College of Agriculture and the State Department of Agriculture are to combine in making an exhibit at the National Corn Exposition at Omaha, December 9–19. The exhibit is to take the form of bales of hay and milk cans which will be placed in such form as to show the superiority of New York in these products.

* * *

On November 6th, the Cornell section of the American Society of Agronomy met at the residence of Dr. Lyon. Professor Stone spoke of the work at the Worburn and Rothamstead Experiment Stations which he visited while in England this past summer.

* * *

G. E. Bentley, '12, was the winner this year of the Greeley scholarship. Mr. Bentley comes from Fluvanna, Chautauqua County. He was graduated from his preparatory school with the class of '06, and took a two years' post graduate course. This past summer he took a six weeks' course at the Sturgis School of Ithaca. He is a candidate for the freshman crew.

* * *

The 49th Annual Meeting of the Fruit Growers' Association of Toronto, was held Nov. 10–11. Wednesday morning Professor C. S. Wilson read a paper on "Results of Orchard Surveys in New York State."

* * *

Professor Publow of the Dairy Department has recently been offered the position of Director of the Kingston Agricultural School. Although a substantial increase in salary has been offered he has not yet decided to accept the offer.

* * *

Mr. James Dunlop of Kilmarnock, who is the largest breeder and exporter of Ayrshire cattle in Scotland and a member of the Scottish Agricultural Commission, while touring Canada and some of the States, recently visited the College. He secured many valuable points of interest and value to take back to Scotland. Mr. Dunlop, was very complimentary in his criticisms although it is well known that a Scot is not given to flattery; he stated frankly that the Dairy Department is the finest and best equipped of all he had visited in this country.

* * *

Professor Smith, an Englishman, who is Professor of Agriculture at the new College at Pretoria, South Africa, made a three days' visit at the College at the same time Mr. Dunlop was here, and was equally well pleased.

Dr. Clark, a former Professor in the Cornell School of Forestry, spent a few days in Ithaca last month. He is now located at Vancouver, British Columbia, where he has large interests in forest lands.

* * *

President Schurman's Annual Report states that "The number of students enrolled in the University for the year ending September, 1908, was 4,465, of whom 3,734 were regularly enrolled for the academic year from September to June and the rest attendants at the Summer Session and the Winter School in Agriculture. This is an increase of more than 1,000 over the enrollment of four years ago, when the total figure was 3,423."

The enrollment in the Agricultural College also shows a marked increase over previous years the registration, not including Graduate students being 257 regular and 134 special students, a total of 391, while Winter Course registration on November 11th, was already in excess of last year's.

* * *

At a recent meeting of the Agricultural Association, it was voted to levy an assessment of $1.00 on every student of the College, for the entire support of the Association, the musical clubs, and the College athletics. The following committee was appointed by E. I. Bayer, Sp. President of the Association, to collect the tax: G. H. Miller, '09, S. F. Willard, Jr., '09, N. R Peet, '10, E. M. Tuttle, '11, and W. E. Malcolm, '12.

* * *

H. C. Young, '10, Captain of the Cross Country team, easily finished first in the cross country dual meet with Yale on November 3. He broke the record of the course, the regulation intercollegiate six miles and a half, crossing the line 35 minutes and 57 seconds after the start. The other Cornell men, Taylor, Bean, White, Jones, Bogart and Grant finished in the following order; second, fourth, seventh, eighth, ninth and tenth. Cornell easily won the meet, the score being Cornell, 22: Yale, 37.

The Agricultural Train left Ithaca, November 23, via the D. L. & W. Railroad, the work commencing at Union from which point a run was made to Corning with stops at all the intermediate stations from thirty to sixty minutes. At Corning an evening meeting was held and the stop made for the night. Leaving Corning, Tuesday morning for Batavia where the next evening meeting was held, stops were made at all the stations en route as before. Wednesday morning the train made a run to Avon up to which time it was known as a Milk Special. From Avon the train went to Corning via Hornell as a Potato and Bean Special arriving at Ithaca, Wednesday evening. The addresses on milk were in direct charge of Professor Wing: those covering the subjects of potatoes and beans were Professors Stone and Warren on the crops, with Professor Whetzel and Mr. Crosby on the protection from diseases and insects. Dr. Webber spoke on the question of crop improvement and Professor Cavanaugh dealt with the matter of soil fertility. Besides these speakers other members of the teaching staff accompanied the train and gave talks on these and kindred subjects.

Director Morgan of the Agricultural School at Alfred University was a member of the party together with an Associated Press reporter and Luis Jackson, Industrial Commissioner of the Erie Railroad. The train was made up of three or four coaches and dining and baggage cars.

* * *

Professor C. A. Rogers and M. P. Jones, '08, spoke at Geneseo, November 13th, and the 14th at Byron at a Grange meeting.

* * *

Professor Rice accompanied by W. O. Strong, '11, Assistant Secretary of the Poultry Association and M. P. Jones, '08, of the Extension Department attended a meeting of the Owego Poultry Association on October 22d. Prof. Rice delivered an address illustrated with lantern slides on the "Results of Recent Poultry

Investigation at Cornell." Mr. Jones spoke on "The Poultryman and his Relation to Agricultural Education.

* * *

The Poultry Association held its second regular meeting at the new Poultry Laboratory in the Dairy Building, October 21st. R. A. Williams, Sp., of the Board of Directors was elected vice-president. L. F. Boyle, President of the Association called a special meeting Thursday evening, November 5th, immediately following the Assembly. It was voted to change the dates of the future regular meetings to the second and fourth Tuesdays in each month in order not to conflict with the Agricultural Association.

* * *

Lazy Club meetings during the past month have been held at the Forcing House each Monday evening. On October 12, Professor Craig presided and Mr. Leon Bachelor spoke of his experiences in Plant Breeding during the past summer. Grapes were served as refreshments.

On October 19, S. F. Willard, Jr., '09, discussed the news and Mr. Harry Chase of Riverside, California spoke of Orange Growing in that state. He exhibited some fine samples of fruit that had hung on a tree for eighteen months, two crops being often found on a tree at the same time.

On October 26, the news was reported by Mr. Moore. Fruit Growing in Maine was discussed by Mr. H. Breckenstrater who predicted a great future for the apple districts of the state if a more uniform method of packing and marketing is used.

November 2, was chrysanthemum night, an account of which is found on another page. On November 9th, Professor Judson presided and the first part of the session was occupied in discussing the various local names for the blue berry and allied species of wild bush fruits. Mr. Cummings gave an interesting account of the experiments in crossing the Vacciniaceæ family, performed by Professor Munson of Maine. Mr. F. E. Benedict, '11 gave an account of his experiences during the past season with "Uncle John" Spencer at Westfield, Chautauqua County, consisting of the supervision of the picking and marketing of a fine cherry crop. They were shipped to Cleveland, Ohio, and brought the highest price through extra care in picking and packing.

* * *

The first November meeting of the Agricultural Association was held November 10th, with a surprisingly small attendance. Mr. H. B. Winters of Smithboro, who was to have addressed the Association was detained at his home by illness and Professor Stone kindly consented to fill the program of the evening. Those who attended were fortunate in hearing a most interesting general account of the Professor's recent vacation trip through Great Britain. In a most informal and enjoyable way, Professor Stone led the audience over his route and spoke in some detail on some of the features of the trip which particularly impressed him.

* * *

The second game played by the College Soccer Football team against the College of Law resulted in a no-score tie. The game was therefore scheduled for a later date, to be played off before the close of the season. On November 10th, the team appeared on the field in readiness to play a scheduled game against the Veterinary College team. The latter did not turn out, however, and the game was thereby forfeited to Agriculture.

* * *

At the time of this writing the plans and preparations for the Fruit Show were developing rapidly and satisfactorily. Every indication was for a more complete and successful exhibition than that of last year and the specimens that arrived almost daily were of a high quality. A complete and probably illustrated account will appear in the January COUNTRYMAN.

FORMER STUDENTS

'98, B. S. A., '05, M. S. A.—It is a little less than a year since Professor, now President, J. W. Gilmore paid us a visit and since that time he has been "doing things" in a truly Cornellian way, and with his characteristic thoroughness and determination. These traits have been noticeable characteristics in him since the time of his first connection with Cornell.

J. W. GILMORE

Professor Gilmore was born in 1872, in White County, Arkansas. He attended the Fort Worth High School in Texas, and being graduated he entered Cornell in 1893, registering in the College of Mechanical Engineering. The following year, however, he changed to Agriculture and was graduated with the degree of B. S. A. in 1898. Shortly after his commencement he went with Mr. C. D. Brill, to China, to teach Agriculture at the Agricultural School of Wuchang. Here he remained until the outbreak of the Boxer uprising in '99, when he left China and after an extended trip through various parts of the world, took the position of teacher of agriculture in Honolulu. The following year he taught the same subject in the Philippine Islands and was made Fibre Expert in the Philippine Bureau of Agriculture. After leaving this position and after more travelling, Professor Gilmore returned to Cornell, in 1902, becoming Assistant Agronomist in the Department of Agronomy. In 1904, he was made Instructor, and in 1905, received his M. S. A. In 1906, two more honors were conferred upon him, election to Sigma Xi and his advance to Assistant Professor. In the summer of 1907, he was called to the Pennsylvania State College to join Director T. F. Hunt in organizing the Department of Agronomy there, on the foundations of the old Department of Agriculture. The number of courses given was increased from two to eleven, and other improvements were effected in like degree. While there, Professor Gilmore organized the Soil and Crop Investigation Laboratory, completely systematized the field experiments, and devised a machine for automatically registering the temperature in soil or other media.

In the summer of 1908, Professor Gilmore was once more called away this time to assume the presidency of the new Agricultural College of Hawaii. Here he found everything in the preparatory stage, with grounds to lay out, buildings to erect, "sentiment to develop, courses to arrange, faculty to organize—everything to do." With his customary directness, he lost no time and already he is able to report two buildings completed and a registration of over thirty students." "Things are progressing satisfactorily, he says, which we who know him can interpret to mean that he is instilling Cornell spirit and energy into the development of an institution that will be of vast benefit to the Islands, and their people.

President Gilmore was married in August, 1900, to Miss E. M. Hitchcock and has two children, his whole family being with him in Honolulu. With this brief mention and recognition of his work, and his useful life, we express to President Gilmore, as a friend and a Cornellian,

our congratulations upon the growth of his institution, and our sincere regards and wishes for further success and prosperity to accompany him throughout his life.

We have further news from Hawaii, in the report of the recent formation of a Cornell Club. At the first banquet of the club held a short time ago in Honolulu, the following alumni of the College of Agriculture were present and renewed the old ties with their Alma Mater: President Gilmore, '98, D. L. Van Dine, '01, P. D. Schuyler, '94, C. J. Hunn, '08, J. E. Higgins, '98, and Vaughn McCaughey, '08. To this new association also do we extend our hand and solicitudes.

'85, Sp.—H. C. King, since leaving Cornell has been running his farm at Willow Creek, New York, until recently. At present he is doing clerical work in the office of the *True American*, a Prohibition Monthly, published at Battle Creek, Michigan. This is also the headquarters of the Michigan Prohibition State Committee.

'05, G.—J. S. Cates of the U. S. Department of Agriculture was married October 17th, to Miss Theodosia Dutrow of Washington, D. C.

'05, B. S. A., '07, M. S. A.—L. G. Dodge of Washington, D. C., and Miss Alice Ware Cole of Beverly, Mass., were married September 14th, at the home of the bride's parents.

'05, W. G. A.—Howard Olin, who is located at Perry, New York, on his father's farm, was recently married to Miss Harriet Gregg of Perry.

'06, Sp.—We are glad to announce the marriage of Mr. B. H. Hawkins, '06, to Miss E. J. Stanley of Syracuse, on November the fourth. Mr. and Mrs. Hawkins will return to Syracuse by December to live at 302 Summit Avenue.

'06, LL.B., '08, B. S. A.—H. F. Major has been appointed Assistant in Landscape Gardening at the University of Illinois.

'06, Sp.—On June 20th, Miss Emma M. Lewis of Ithaca, was married to Mr. J. A. Switzer also of Ithaca. Mr. and Mrs. Switzer will make their home in Memphis, Tennessee, where Mr. Switzer has accepted a position in the Department of Experimental Engineering at the University of Tennessee.

'07, W. P., '08, W. A.—Nestell K. Anderson, was married Oct. 14, 1908, to Miss Lena Clarke of Vermont. Mr. Anderson is running his own farm at Gaylordsville, Conn.

'07, B. S. A., '08, M. S. A.—Norman H. Grubb, who will be remembered by many of the older men who are taking Landscape Architecture, is at present in Washington, D. C., with the United States Forest Service. His present work, he writes us, is the testing of forest tree seeds. His address for the year is 1939 Biltmore Street, N. W.

'08, W. G. A.—R. C. Baynard is working for his father on his farm at Wye Mills, Maryland.

'08, W. G. A.—Henry A. Bullard has a position as manager of a farm at Sterlingville, New York.

'08, W. G. A.—Leland B. Cardner is working as herdsman and assistant foreman on a farm at Tully, N. Y.

'08, W. G. A.—Halvor A. Caun is herdsman on a dairy farm at Haverford, Pennsylvania.

'08, B. S. A. The wedding of Leonard Rider Gracy and Miss Esther Edwards Newell, daughter of Mr. and Mrs. Theodore Leonard Newell, took place on September 23 at Brynfan, Shawanese Lake, Pennsylvania.

—*Cornell Alumni News.*

'08, B. S. A.—Lewis A. Toan has been spending a few days with his Cornell friends. He is employed on his father's farm at Perry, New York, where he states, they are intending to devote much time to horticulture. They are contemplating the planting of thirty acres of orchard next year.

'08, W. G. A.—Jay Fred Hager is working his father's farm at Bainbridge, New York.

'08, W. G. A.—E. M. Hubbard is in the nursery business at Seneca, New York.

'08, W. G. A.—Burton A. Outhouse is working on his father's farm at Canandaigua, New York.

'08, W. G. A.—Linden Rigby is working his own farm at Somerville, New York.

'08, W. G. A.—Harold C. Robinson is farming for himself at Riverhead, Long Island.

'08, W. G. A.—Chas. P. Russell has been spending the summer as working foreman on a farm at Riverhead, Long Island and will return to his home at Williamson this fall to conduct his father's farm.

'08, W. G. A.—W. J. Toussanit has been working this summer as a farm hand at Glasgow, Missouri, on a dairy farm.

'08, W. G. A.—Solon G. Vail is running his own farm at South Royalton, Vermont.

'08, W. G. A——Ernest S. Yawger is manager of the Puritan Hill Gardens at Ithaca, New York.

'08, W. G. A.—W. P. K. White is manager of a farm at Batavia, New York.

Christmas and the COUNTRYMAN

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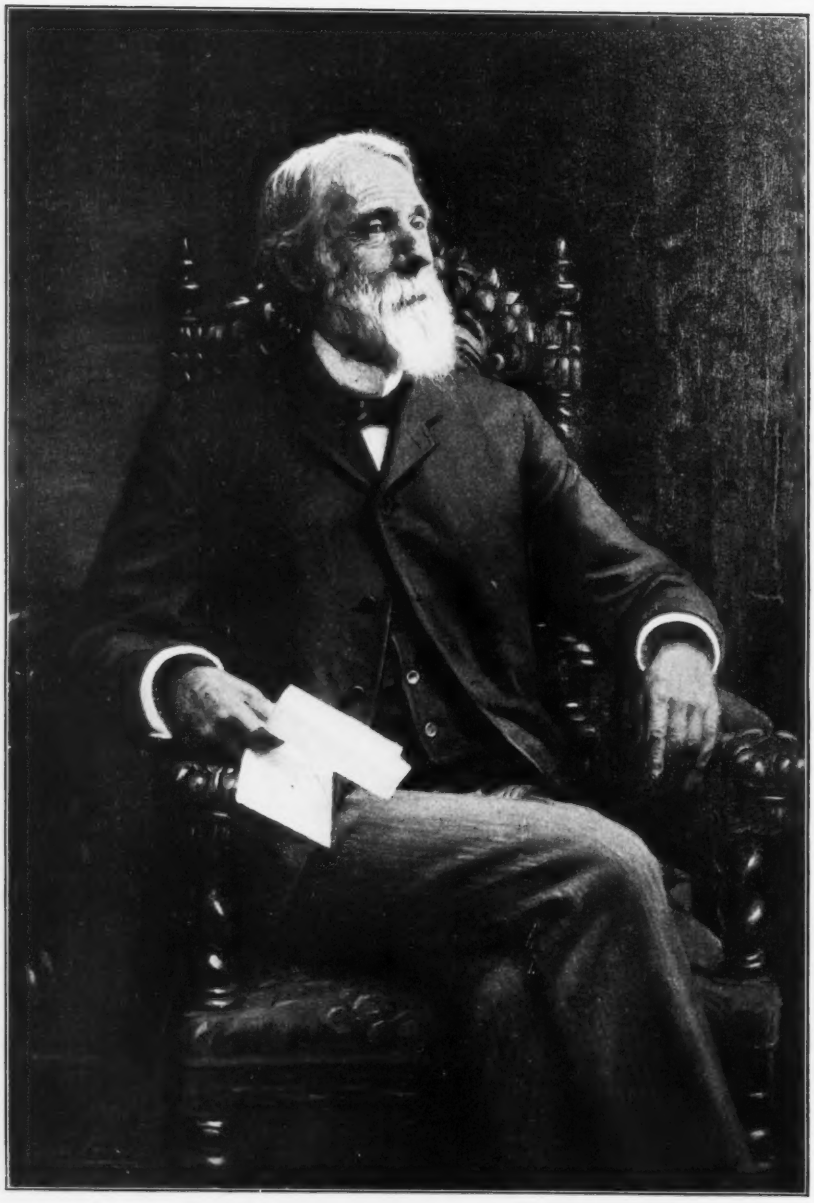

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